

# **AVP2**

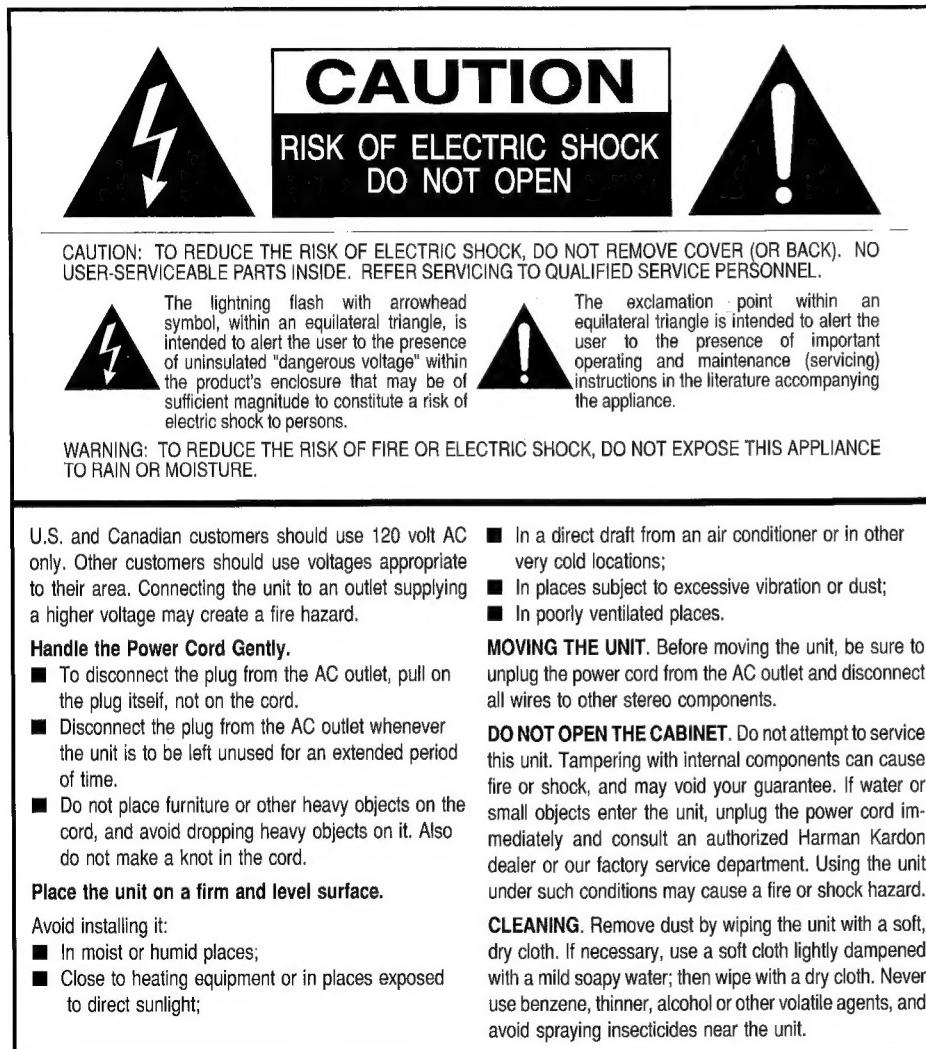
**Digital Surround Processor**

**INSTALLATION AND OPERATION MANUAL**

**harman/kardon**

# FOR PEOPLE WHO DON'T READ MANUALS

## Please read this one.



The time you invest will be worth it. If you feel you absolutely do not have time to read it just now, here is a short list of key information you will need in order to get the most from your AVP2. Reviewing these sections will take only a few minutes.

- Becoming Acquainted with your AVP2
- AVP2 Features

- AVP2 Surround Parameters
- Installing your AVP2
- Setup

If you don't have time to read this manual, a step-by-step quick installation guide is provided on the next page. In order to achieve optimum system performance, it is still essential that you read and understand the materials presented in this manual.

**CAUTION:** TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE, OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

**ATTENTION:** POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications. Le présent appareil numérique n'émet pas de Bruits Radioélectriques Dépassant les limites applicables aux appareils numériques de Classe B prescrites dans le règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

# A STEP-BY-STEP "QUICK GUIDE"

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## INSTALLATION OF YOUR AVP2

1. As a minimum, you will require the following items: left/right front speakers, two surround speakers, four channels of audio amplification, and an AV source plus necessary cables. Additional system options include a center channel speaker, and subwoofer plus additional channels of audio amplification and/or additional audio-video sources.
2. Place the speakers and connect them to your amplifiers. Be sure you observe proper polarity.
3. Connect the appropriate interconnect cables between the outputs of the AVP2 and the audio amplifier inputs.
4. Connect the output of an audio video source such as a laser disc player or hifi VCR to one of the inputs on the AVP2.
5. Using the handheld remote control, select the following:  
Dolby™ Pro Logic.  
CTR OFF if a center speaker is not being used.
6. Push the Noise Sequencer button on the front panel of the AVP2.

A test signal will start on the left front channel and sequence clockwise around the room.

If any channels are mis-connected, correct the connections.

Adjust the Output Trim Level controls on the back of the AVP2 so that the volume is the same from each speaker at the listening position.

We recommend the use of a sound pressure level meter, if available. Set it for "C" weighting, "slow".

Adjust the output trim levels so each speaker produces 75 dB sound pressure level.

7. Turn off the Noise sequencer. Select a Dolby Surround encoded movie on laser disc or hifi VCR to verify system performance.

*Please read the rest of this manual. It provides additional information which will help you optimize your system performance.*

Dolby, Pro Logic, Time Link and the double-D logo are trademarks of Dolby Laboratories Licensing Corporation.

# BECOMING ACQUAINTED WITH YOUR AVP2

The AVP2 is the most advanced preamp/AV control center/surround processor available in its price range.

In addition to extensive audio processing capabilities, the AVP2 incorporates a comprehensive audio-video switcher.

The entire unit is microprocessor controlled utilizing an LED display system to provide visual indications of the operational status.

## AVP2 INNOVATIONS AND TECHNOLOGY

The AVP2 incorporates a combination of existing and new technology:

- Proprietary high speed Digital Servo Logic™ system and other advanced surround technology designed by Jim Fosgate for use with both surround encoded and non-encoded stereo audio sources
  - Dolby Pro Logic Surround for encoded motion pictures, stereo CDs and television audio soundtracks.
  - Proprietary Music Surround modes (Rock and Popular) which deliver true stereo surround.
- The AVP2 incorporates a comprehensive menu of pre-programmed modes for playback

of music sources. Some modes may be altered to suit listening tastes or environmental requirements.

## FEATURES

In addition to a wide range of listener-selectable surround parameters, the AVP2 provides a number of beneficial operating features. These include: automatic input balance calibration, a built-in test noise sequencer, adjustable output level trim controls, A/V input switching, a separate A/V record output circuit, direct remote access of inputs and surround parameters, automatic memory update of important changes to specific surround parameters.

A complete description of operating features begins on this page.

## MOTION PICTURE SURROUND PARAMETERS

Two parameters for the playback of motion picture soundtracks are provided. They are Dolby Pro Logic and our proprietary 70mm mode. A complete description of all AVP2 surround parameters is found on page 6.

## OPERATING FEATURES

The AVP2 incorporates a number of operational features which have

been designed to enhance the performance and versatility of your home surround audio system. An explanation of each feature and application follows each listing.

## Selectable Bass Equalization

Three levels of bass boost (4, 8, and 12 dB) are selectable from the handheld remote control. As the boost is increased, the range of maximum boost is shifted upward from about 30 Hz to 60 Hz. Normally, with most systems no more than 4 or 8 dB of boost will be required once proper output level and woofer placement is determined.

## High Frequency Equalization

This circuit is useful with program material which sounds "hot" or bright. It can be manually switched in with the handheld remote control.

An indicator light on the front panel indicates when the high frequency re-equalization circuit is switched on.

## Steering Logic Display

This display provides a visual indication of steering logic activity. As an example, a center front signal, such as dialogue, will illuminate the center top LED while surround encoded signals will illuminate the bottom LEDs.

During use with a stereo signal, the entire array will constantly change illumination levels on a dynamic basis.

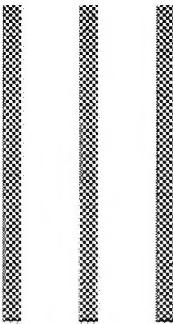
A monophonic signal will only illuminate the center top LED. Because of the wide dynamic range of Digital Servo Logic, when no audio signal is present, the LED indicators may differ in illumination as a result of normal production variations and the varying noise floors of audio sources in the system.

## Source Select

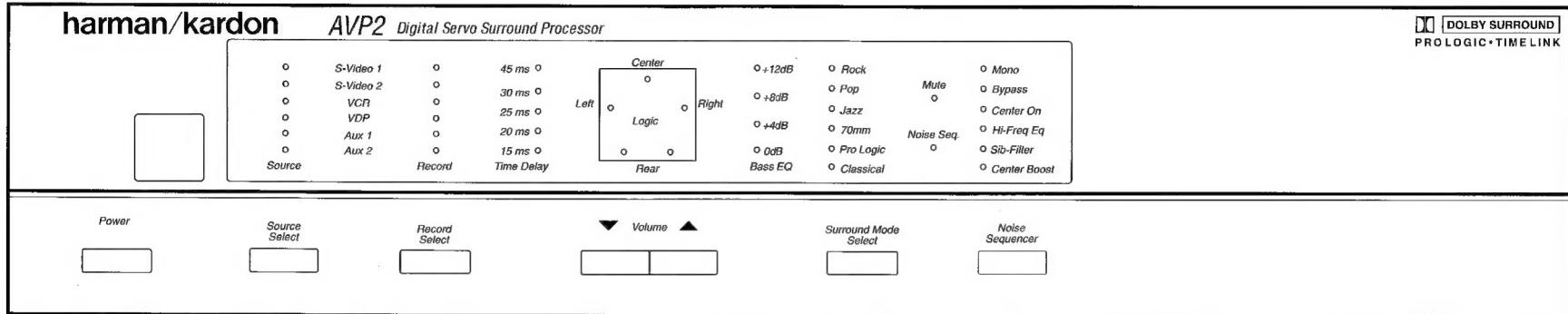
This function, available via the remote and the front panel of the AVP2, selects the desired A/V input. A desired source may be directly selected from the handheld remote control.

## Record Select

This function, available only from the front panel of the AVP2, selects the A/V source for recording purposes or to be distributed to a second room location. The record output stereo audio is unprocessed. Composite video is not transcoded to S-type video or vice-versa.



# AVP2 FRONT PANEL



DOLBY SURROUND  
PROLOGIC • TIME LINK

## Center Boost

This function, accessible via the handheld remote, increases the output level of the center front channel by approximately 3 dB. Pushing the CTR boost a second time restores center front level to normal.

CTR boost may be occasionally desired when listening to some motion picture sound tracks.

## Sibilant Filter

This function, accessible via the handheld remote, engages circuitry which minimizes crosstalk in the surround channels caused by speech sibilants but without causing loss of high frequency detail.

An indicator light on the front panel indicates when the sibilant filter is engaged.

Use the sibilant filter whenever you hear sibilant sounds from dialogue present in the surround channel.

## Mute

This function totally mutes the output of the AVP2.

## Time Delay

Delay settings, accessible via the handheld remote, can be adjusted from 15 to 30 ms in the Pro Logic mode, and up to 45 ms in the 70mm and Classical modes.

Changes in time delay settings are automatically retained in the memory of the AVP2.

Time Delay is not available in the Rock, Popular, or Jazz modes and the Time Delay LED indicators will not be illuminated.

## Remote Infrared Sensor Jack

This miniature input jack, located on the rear panel, accepts input from a remote infrared transmitter/sensor or remote key pad. The remote IR jack is provided for custom installation applications. Consult your dealer or Harman Kardon for additional application information.

## Accessory Control Output

This five-pin standard DIN jack located on the back panel on the lower right corner, can provide trigger signals to turn on the system electronics, lower or raise a projection screen, dim or raise room lighting, etc.

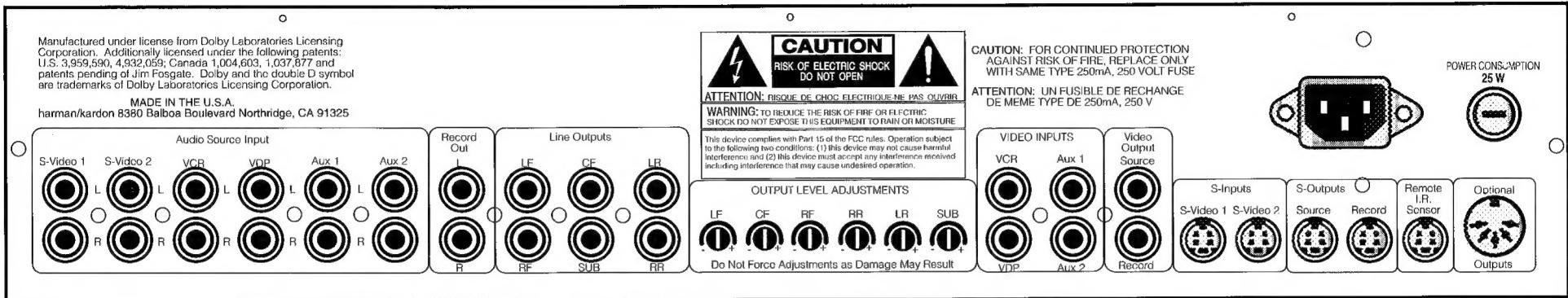
Consult your dealer or Harman Kardon for additional information regarding future adaptor availability.

## IMPORTANT NOTE

As AV inputs are selected, some changes in settings (surround mode, center front on/off, hi-freq eq, etc.) are automatically memorized two seconds after selection, and the LED display will momentarily flash. This is normal and indicates that the selected parameters used on a particular Input and Mode will be stored in the AVP2's memory circuits.

To RESET your AVP2 to the original factory settings, unplug it from the AC outlet. While pushing the Noise Sequencer button on the front panel, plug the AVP2 back into the power source. Release the Noise Sequencer button after five seconds. Factory settings will then be restored.

# AVP2 BACK PANEL



## AVP2 AUDIO VIDEO INPUTS/OUTPUTS

### Audio Inputs

All input jacks are grouped to the left hand side of the back panel as viewed from the backside of the AVP2. They are labeled S-Video 1, S-Video 2, VCR, VDP (Video Disc Player), Aux 1, and Aux 2. All six inputs accept input audio signals ranging in level from .25 volt to 3 volts.

### Audio Record Outputs

This pair of output jacks located next to the audio input group, provides unprocessed stereo audio for a tape recorder or a second zone or room location.

### Audio Outputs

This group of output jacks provides the appropriate signals to feed external power amplifiers driving the main front speakers for left, right,

and center (LF, RF, CF) subwoofer(sub), and left and right rear speakers (LR, RR).

Individual output level trim controls are located to the right of the audio output jacks.

The trim controls can be finger adjusted. Exercise care when turning the trim controls; do not use excessive force or the control may be damaged.

### Video Inputs

These composite video inputs are located just to the right of the audio output trim level controls.

They are labeled to coincide with four audio inputs: VCR, VDP, Aux 1, Aux 2,

### Video Outputs

This pair of composite video outputs located to the right of the video inputs provide composite video outputs to feed a video monitor or projector.

The record output provides a separate audio feed for recording or a second room location.

The video signal for the record output is selected by the Record Select button the front panel of the AVP2.

### S-Video Inputs

S-Video 1 and S-Video 2 are located just to the right of the composite video outputs. S-Video 1 and S-Video 2 accept S-type video signals from S-type VCRs, laser disc players, and satellite television receivers.

### S-Video Outputs

The S-Video outputs are located to the right of the S-Video inputs. The Source output feeds a video monitor or projector which accepts S-type video while the Record output feeds a VCR or second room location.

### CAUTION:

We do not recommend running S-Video over cable lengths exceeding 15'. An optional switcher/RGB chroma decoder, the VC 3, is available from Harman Video.

The VC 3 automatically selects S-type or composite video and transcodes it to RGB for feeding RGB-capable video projectors such as the Harman Models 3, 6, 8, and Data series

# AVP2 SURROUND PARAMETERS

## INTRODUCTION

The AVP2 has been designed to offer the most important surround parameters which accomodate all types of music and motion picture sound tracks. Conventional motion picture surround processing technology was not originally intended for music reproduction so virtually every other manufacturer of surround processors has elected to offer digital soundfield processing, or "DSP", for music listening enhancement.

While DSP is rather technically ambitious, it often delivers results that are distinctly artificial sounding. Digitally-generated reverberation or effects are usually added to the natural or studio-created ambience of the original recording. But mixing DSP-generated effects via a home processor usually creates a sonic result that is not representative of the original recording or the desired new venue. More recently, some manufacturers have started providing digital front channel effects, as well, in combination with Pro Logic decoding in an attempt to create the sound characteristics of a large theatre auditorium environment. Unfortunately, the result is usually the accurate recreation of an acoustically less-than-perfect theatre!

The very best theatres are designed and constructed using acoustical techniques to actually reduce reverberant information.

This allows the audience to hear through to the sound track rather than be distracted or suffer from poor dialogue intelligibility and imaging as a result of too much reverberant sound in the auditorium.

The various operating modes designed for the AVP2 deliver natural recreation of the original recording environment without the use of DSP.

The technology employed in the AVP2 is the result of nearly two decades of research in the field of multichannel sound by Jim Fosgate.

## Rock

This mode was designed to give an exciting, wrap around presentation to a typical multi-track recording. The Rock mode is beneficial with any stereo recording which has a very narrow front soundstage. Stereo recordings which are recorded with excessive left/right separation should not be played back in the Rock mode.

## Popular

The Popular mode is very similar to the Rock mode but the listening

perspective is slightly more frontal with less of a "wrap-around" effect.

The Popular mode is the most universal for a wide variety of music, including rock, light rock, Broadway shows, etc, especially if you enjoy an "up front" perspective.

Many motion picture sound tracks are very exciting when decoded through the Popular mode.

## Jazz

The Jazz mode is particularly well suited for the reproduction of any live recording of popular or jazz music. The soundstage will be primarily frontal in presentation with ambience coming from the surround speakers. Separation of instruments will not sound exaggerated, but will sound like an ensemble playing in front of you. The natural room acoustics of the recording environment will be preserved.

The Jazz mode delivers full-range mono surround information.

## 70mm

This is our most advanced motion picture surround mode and features controlled blending of left/right front channel information into the surround channels.

This provides a heightened sense of spaciousness with software which

has little or no encoded surround information.

The 70mm mode also produces stereo-like surround effects without destroying the integrity and accuracy of the front sound stage. Up to 45 ms of time delay may be used in the 70mm mode.

## Pro Logic

This is the consumer version of the professional Dolby surround system used as part of Dolby Stereo in motion picture theatres.

A sophisticated microprocessor system in the AVP2 re-configures Digital Servo Logic to precisely duplicate Pro Logic.

The audio circuit topology used within the AVP2 delivers Pro Logic decoding with superb audio quality. Time delay settings range from 15 to 30 ms in 5 ms increments.

## Classical

The Classical mode uses no processing on the front channels unless the CTR button is engaged on the handheld remote control. This "purist" approach delivers maximum sonic quality from complex orchestral and choral works. The Classical mode provides a "midhall" listening perspective.

# REMOTE CONTROL FUNCTIONS

## Mono

This mode generates a synthesized surround field from a monaural program source.

A pleasing, spatial effect can be derived from older music recordings, mono TV broadcasts (particularly sporting events), or movies mixed with mono sound.

If you own a monophonic VCR, or other monophonic audio components, the connection to the AVP2 must be completed using a "Y" connector. The "Y" connector provides the same audio signal to the AVP2 stereo inputs.

## Bypass

The Bypass mode allows the listener to electronically remove the AVP2 surround processing circuits from the audio signal path.

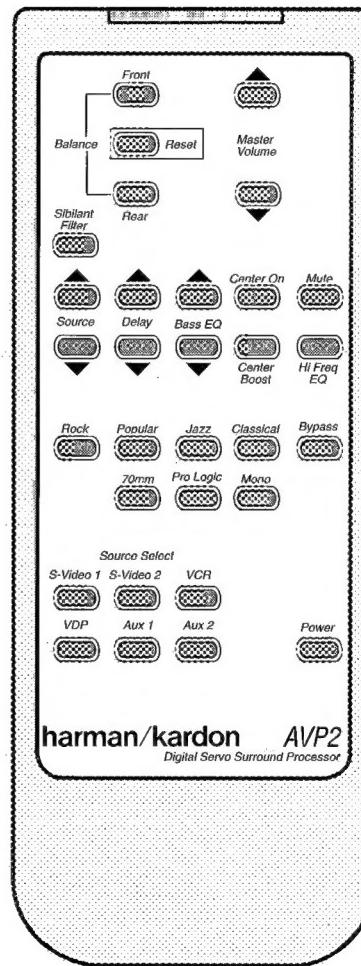
Only the left and right front speakers and subwoofer remain functional. A single low distortion buffered variable gain stage of proprietary design remains in the audio signal path.

This stage is extremely "pure" in design and allows remote operation of system volume without the necessity of a motorized volume control.

The handheld remote supplied with the AVP2 operates reliably up to 25 feet from the AVP2. The AVP2 will accept signals from the handheld remote over an angle of approximately 40 degrees.

The handheld remote is supplied with two "AA" batteries factory installed.

All major operating functions of the AVP2 can be accessed from the handheld remote control. In addition, overall system volume and front-to-surround balance can be controlled from the handheld remote control. The Reset button is located between buttons which raise or lower the volume of the back channels. Pushing the Reset button restores the system balance to the original factory setting. Because of variations in amplifier sensitivity and speaker efficiency, it may be necessary to recalibrate the Reset settings. The Reset setting should be calibrated when initially setting up the system levels using a sound level meter and the noise sequencer in the AVP2.



### STEP 1.

With the AVP2 installed and operational, push the Reset button.

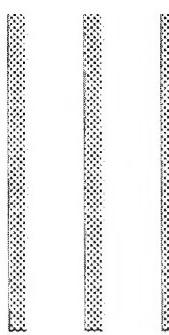
### STEP 2.

Push the Noise Sequencer button on the front panel of the AVP2.

### STEP 3.

Using a sound pressure level meter, adjust the output level trim controls on the back panel of the AVP2 so that each speaker produces a 75 dB sound pressure level at the listening location.

Once this procedure has been completed you will be able to change front to back balance of the system as software and listening tastes dictate and instantly return the balance to the setting you have calibrated for your system by simply pushing the Reset button on the handheld remote control.



# INSTALLING YOUR AVP2

For convenience of operation, we suggest that you run all your main audio and video sources through the AVP2.

Four inputs accept audio and composite video sources while the remaining two accept audio and S-type (Y/C) video from S-VHS, S-Beta, and some laser video players and satellite receivers.

The AVP2 does not transcode the video signals. Composite video will only appear on the composite video outputs (monitor and record).

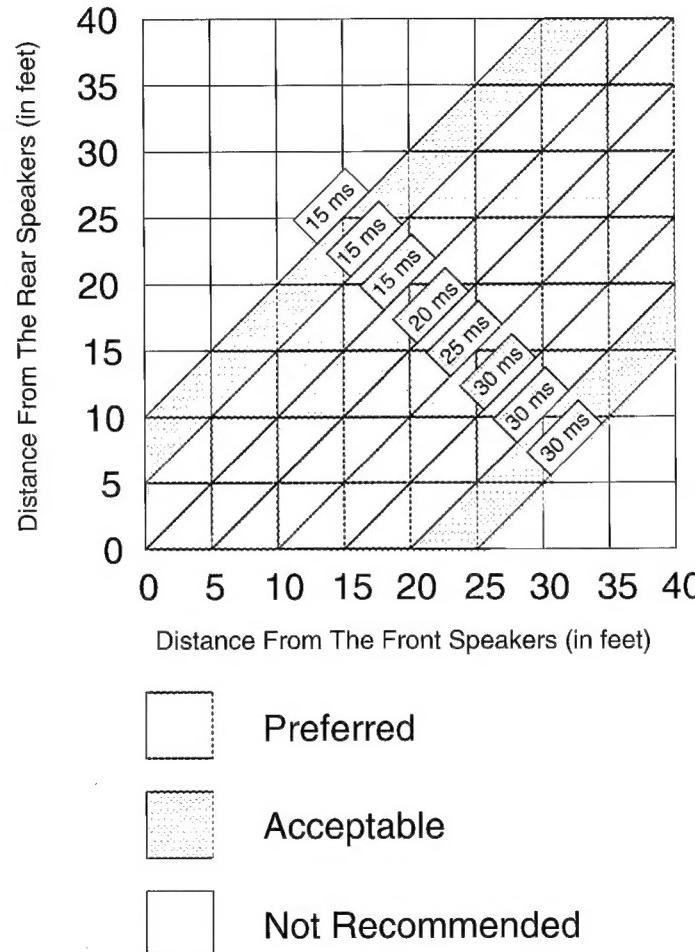
Likewise, S-type video signals will only appear on the S-type outputs. The AVP2 can become the heart of a home entertainment environment.

Every type of consumer audio source can be used with the AVP2 except a turntable.

If you wish to use a turntable cartridge with the AVP2 you will require a phono preamplifier or stereo receiver to provide proper preamplification and RIAA equalization.

The main output or tape output from a preamp or receiver should be connected to one of the six audio inputs on the AVP2.

If you have a subwoofer, use the Mono Sub output.



## Surround Delay Graph

### Adjusting the Dolby Time Link Digital Audio Signal Delay System

All Dolby Pro Logic surround decoders incorporate an audio signal time delay to the surround speakers. The AVP2 incorporates Dolby Laboratories' advanced new digital time delay system: Time Link.

The Dolby Pro Logic surround process occasionally yields erroneous leakage of front channel sounds to the surround speakers. Time Link, a digital audio time delay circuit, is used to reduce the perceived level of leakage because of the "Haas" or precedence effect. When the front channel information leaks into the surround speakers, we end up hearing this leakage out of the surround speakers following the arrival (at our ears) of the front channel information.

The optimum Time Link setting depends on the distance between the main seating area and the front speakers, and the distance between the main seating area and the surround speakers.

Refer to the graph for choosing the best setting in any given situation. Measure the two distance and look to where they meet on the graph. The shaded areas will indicate the best setting for Time Link. If in doubt, simply set Time Link for 20 ms of delay. The setting will be stored in the memory of the AVP2 until you change it. You may also use Time Link to enhance certain music surround modes available in the AVP2.

# TROUBLESHOOTING

SYMPTON	PROBABLE CAUSE	SOLUTION
No output from one or more channels	■ Defective cables or amplifier	■ Check or replace cables or fuses ■ Verify that signal source is operating and providing proper signal output to the power amplifiers ■ Verify proper operation of remote control
No center channel output	■ Amplifier not turned on ■ Center button on remote not engaged	■ Check amplifier and interconnect cables ■ Verify proper operation of remote control
Poor or smeared imaging	■ Poor room acoustics ■ Poor program source  ■ Improper speaker polarity	■ Use absorption or diffusion materials on walls ■ Check another program source ■ Source is synthesized stereo from mono source ■ Check hookup of speakers to verify polarity
Indistinct dialog	■ Slap echoes ■ Miscalibration of center channel	■ Add absorption or diffusion materials on floors and walls ■ Check levels using noise sequencer and sound pressure level meter ■ Center channel speaker does not match left/right speakers with respect to efficiency, phasing, or frequency response
Clipping distortion	■ Inadequate power amplifiers ■ Subwoofer level too high ■ Excessive room absorption ■ Poorly recorded program source ■ Excessively high playback levels ■ Bass EQ level too high	■ Use more powerful amplifiers ■ Adjust subwoofer output level ■ Remove absorptive materials selectively ■ Try alternative program source ■ Reduce playback levels ■ Reduce Bass EQ level
Too little or too much bass	■ Misadjusted subwoofer level ■ Severe room modes or bass loss due to room construction ■ Incorrect setting of Bass EQ level	■ Adjust subwoofer output level ■ Move subwoofer(s) to improve performance  ■ Re-adjust Bass EQ level
Uneven surround coverage	■ Poor speaker placement, strong reflections ■ Excessive absorption near surrounds	■ Add absorption or diffusion materials ■ Remove absorptive material near surrounds

# *ABOUT RADIO-TV INTERFERENCE*

## **IMPORTANT INFORMATION FOR THE USER**

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**NOTE: Changes or modifications may cause this unit to fail to comply with Part 15 of the FCC Rules and may void the user's authority to operate the equipment.**

# AVP2 SPECIFICATIONS

<b>Frequency Response:</b>	1 Hz to 100 kHz +.5/-3 dB left/right main channels. 125 Hz to 100 kHz center front channel. Surround channel response varies from 3 kHz to full range depending on the surround parameter selected. Pro Logic as Dolby Labs specification.
<b>THD/IMD:</b>	Less than 0.05% at -6 dB below maximum output.
<b>Maximum Output:</b>	7 volts rms into a 25 Kohm input impedance.
<b>Static Channel Separation:</b>	Better than 25 dB between the front channels and the surround channel; typically 40 dB or better between all channels.
<b>Dynamic Separation:</b>	Instantaneous multichannel localizatoin.
<b>Steering Logic Attack Time:</b>	Typically 5 milliseconds under normal program conditions in music and movie surround modes. Prologic as per Dolby Labs requirements.
<b>Bass EQ:</b>	Flat, +4 dB, +8 dB, +12 dB selected from handheld remote.
<b>Subwoofer Response:</b>	1 Hz to 80 Hz. 12 dB/octave low pass.
<b>Signal to Noise:</b>	All outputs, better than -90 dB "A" weighted referenced to rated output.
<b>Dolby Time Link Range:</b>	15 to 35 ms in five millisecond increments (Pro Logic); 45 ms in selected music and movie surround modes.
<b>Input/Output Impedance:</b>	25 Kohms input; 300 ohms unbalanced output source impedance.
<b>Power Supply:</b>	100 to 240 V. (selectable) 50/60 Hz. 25 watts consumption @ 120 V.
<b>Dimensions/Weight:</b>	17.4" W x 13" D x 3.8" H. 8 pounds net weight; 3.6 kilos.

This product was designed and manufactured in the United States of America. This product is licensed under one or more of the following U.S. patents: 3,632,886; 3,746,792; 3,959,590; 3,883,832 and the patents issued and pending to Jim Fosgate including 4,932,059.  
'DIGITAL SERVO LOGIC' is a trademark of FOSGATE•AUDIONICS, a Harman International Company.  
'DOLBY, PRO LOGIC, TIME LINK and the DOUBLE-D SYMBOL' are trademarks of Dolby Laboratories Licensing Corporation.  
Noise Reduction System manufactured under license from Dolby Laboratories Licensing Corporation.

# WARRANTY INFORMATION (USA ONLY)

## SERVICE

Any necessary repairs or adjustments must be performed at the factory or by an authorized service center. In the event that service is required, call 1.800.645.7484 for assistance.

## WARRANTY

This limited warranty protects the original owner of a Harman Kardon AVP2 for a period of two years from date of purchase. The original, dated bill of sale or an on-file registered warranty is required to obtain service.

## LIMITATION ON IMPLIED WARRANTIES

Implied warranties of merchantability and fitness for a particular purpose are limited in duration to a period of one year from the date of purchase. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

## EXCLUSIONS OF CERTAIN DAMAGES

Harman Kardon shall not be liable or in any way responsible for any incidental or consequential damages of any kind. Some states do not allow limitation on how long an implied warranty lasts and/or do not allow the exclusion of incidental or consequential damages, so the

above limitations and exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

## WHAT IS COVERED BY THE WARRANTY

Your warranty covers all defects in material and workmanship when shipped in its original container, with the following specific exceptions.

These are:

- (1) damage to or deterioration of any accessory or decorative surface; (2) damage caused by improper installation or adjustment; (3) damage caused by accident, unreasonable use or neglect; (4) damage from failure to follow instructions contained in this manual; (5) damage from the performance of unauthorized repairs or modifications; (6) any unit on which the serial number has been effaced, modified, or removed; (7) damage occurring during shipment; and (8) units which have been altered or modified in design, appearance or construction. This warranty covers only the actual defects within the product itself, and does not cover the costs of installation or removal from a fixed installation, normal set-up or adjustments, claims based on any

misrepresentation by the seller, or performance variations resulting from installation related circumstances such as program source quality or AC power.

## WHAT IS THE PERIOD OF COVERAGE

This warranty protects the original owner of a Harman Kardon AVP2 purchased and used for a non-commercial, residential use for a period of two years (parts and labor) from the original date of purchase.

## WHO IS COVERED BY THE WARRANTY

Your warranty protects the original owner, so long as the original bill of sale is presented when the warranty service is required. This warranty protects only the original owner, and is invalid as to all subsequent owners of the product.

## WHAT WE WILL DO TO CORRECT PROBLEMS

Harman Kardon will, at its option, either repair or replace the defect, or replace the defective product or part thereof at no charge to the owner for parts and labor covered by this warranty. If necessary repairs are not covered by this warranty or if a unit is examined which is not in need of repair, you will be charged for the repairs or the examination.

You must pay any shipping charges incurred in returning your product to Harman Kardon. We will pay the return surface UPS shipping charges if the repairs are covered by the warranty. Please save the original shipping carton and internal packaging. A charge will be made for replacement shipping materials.

## HOW TO OBTAIN WARRANTY

If your product needs service, you must notify your authorized dealer or call us at:

**HARMAN KARDON**  
**1.800.645.7484**

Our postal mailing address for correspondence is:  
240 Crossways Park West  
Woodbury, NY 11797